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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,748	11/30/2000	Prathap Haridoss	10964-043001/ Case 629	4182
26161	7590	11/10/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			CANTELMO, GREGG	
			ART UNIT	PAPER NUMBER

1745

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/727,748

Applicant(s)

HARIDOSS ET AL.

Examiner

Gregg Cantelmo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. In response to the amendment received October 22, 2004:
  - a. Claims 1-5 and 21-22 are pending. Claims 6-20 and 23-24 have been cancelled;
  - b. The claim objection has been withdrawn in light of Applicant's response;
  - c. The 102 rejection is withdrawn in light of the amendment to claims 1 and 21;
  - d. The 103 rejection stands as modified in light of the amendment.

***Response to Arguments***

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Door in view of either JP 58-126673-A (JP '673) or U.S. patent No. 5,186,877 (Watanabe).

Door discloses a composition comprising a catalyst and a non-electrolytic material (binder) different than the catalyst wherein the composition comprises about

85-96 weight percent catalyst with the balance being the non-electrolytic material (col. 3, ll. 5-32 as applied to claim 1).

The catalyst materials are a variety of materials and particularly noble metals such as rhodium, ruthenium, palladium and platinum (col. 3, ll. 50-68 as applied to claim 5). These materials are the same materials disclosed and claimed in the instant application as the catalyst and are inherently capable of catalyzing oxidation of a fuel gas and undergoing reversible oxide formation (as applied to claims 2 and 4).

Claim 3 fails to further limit claim 1 since the particulars of the fuel cell gas have no bearing on the claimed invention, a composition.

The non-electrolytic material mixed with the catalyst is polytetrafluoroethylene (paragraph bridging columns 5 and 6).

Door discloses a composition comprising a catalyst and a non-electrolytic material (binder) different than the catalyst wherein the composition comprises about 85-96 weight percent catalyst with the balance being the non-electrolytic material (col. 3, ll. 5-32). The binder and catalyst are mixed together. The catalyst materials are a variety of materials and particularly noble metals such as rhodium, ruthenium, palladium and platinum (col. 3, ll. 50-68). These materials are the same materials disclosed and claimed in the instant application as the catalyst and are inherently capable of catalyzing oxidation of a fuel gas (as applied to claims 21 and 22).

An exemplified composition is platinum black and polytetrafluoroethylene (col. 4, ll. 40-47 and example 1 as applied to claims 22).

The difference between claims 1 and 21 and Door is that Door does not teach of the non-electrolytic material comprising a copolymer of tetrafluoroethylene (TFE) and hexafluoropropylene (HFP).

Door teaches that the binder can be any binder compatible with the electrolyte to be used in the fuel cell or other electrochemical cell. Compatible fluorinated hydrocarbon polymers such as polytetrafluoroethylene and fluorinated ethylene propylene are exemplified (paragraph bridging columns 5 and 6). Thus it is reasonable to one of ordinary skill in the art to use any number of known fluorinated hydrocarbon polymers with an expectation of success.

JP '673 discloses using fluorine-contained resin binders such as PTFE or a tetrafluoroethylene-hexafluoropropylene copolymer (abstract).

Watanabe discloses that the hydrophobic binder may be such hydrophobic material as polytetrafluoroethylene (PTFE), tetrafluoroethylene-hexafluoropropylene copolymer (FEP) and polyethylene which gives the hydrophobicity, elasticity and porosity to the final electrode (col. 3, ll. 19-32).

The motivation for using either PTFE or a tetrafluoroethylene-hexafluoropropylene copolymer is that they are equivalent fluorine-containing binders which provide hydrophobicity, elasticity and porosity to the final electrode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Door by replacing the PTFE binder with a tetrafluoroethylene-hexafluoropropylene copolymer since they are known equivalents in the art as suitable fluorinated binder resins which provide hydrophobicity,

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elasticity and porosity to the final electrode. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

### ***Response to Arguments***

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

It is held that each of the secondary references show that suitable resin binders include both PTFE and tetrafluoroethylene-hexafluoropropylene (also known as TFE-HFP, HFP-TFE or PEF). There is a showing in each reference of equivalence for these resin binders and from that, one of ordinary skill in the art would have had ample motivation to replace the PTFE binder of Door with tetrafluoroethylene-hexafluoropropylene as taught by either JP '673 or Watanabe.

Applicant's position to the contrary fails to provide clear and convincing evidence to overcome the suggested teachings in the prior art of record and the rejection stands.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745

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gc

*Greg Cantu*

November 6, 2004

